inventory, space utilization, excess power consumption, technology obsolescence, etc. Conversely, if carriers do not provide adequate switching capacity to meet immediate demand, customers will look elsewhere for service. To assume otherwise is not consistent with marketplace realities. ***The Synthesis Model results and inputs should be costs that are actually obtainable by an efficiently run company.*** To ignore the overall costs that an efficiently run company will actually incur due to growth versus new switch growth costs will produce a fictional result that cannot be achieved. No company can or will attain costs based on purely new switch discount levels.

Switch Cost Estimates

Paragraph 172-173

Sprint agrees that staff has taken a reasonable approach in developing a minimum number of independent variables in their regression equations and combining various switch costs irrespective of the vendor. However, consistent with Sprint's comments relative to paragraph 165, the proposed average host costs are far too low. Also, the regression results themselves are suspect, given the lack of statistical significance. The proposed remote switch costs are reasonable.

Use of the LERG

Paragraphs 174–177

Sprint agrees with staff that the LERG database should be used as the basis to determine host-remote and serving tandem relationships for USF cost development purposes. There are many intangible variables such as county and LATA boundaries, topography, etc. that drive switching coverage and routing requirements which cannot be realistically or reasonably addressed by generic cost model assumptions. A design that reflects actual hosting and tandem relationships between switches is also critical in modeling a viable transport route between those network elements.

Other Switching and Interoffice Transport Inputs

Paragraph 178

Sprint agrees with staff that the cost of MDF/Protector investment per line and power input values should be set to zero for the portion of the Commission study data based on the large LEC depreciation data. However, as stated in paragraph 157, the RUS cost data does not include costs for MDF/Protection and power equipment. These costs should be included over and above the source input data for that portion of the total Commission data set. Sprint agrees that the switch installation multiplier should be set to 1.0 since installation costs are included in both the large LEC depreciation data and the additional data provided by Sprint, BellSouth, and GTE. Again, this is not true for the RUS cost data as pointed out in paragraph 161, unless it is adjusted to include an 8% cost gross-up to the total sum cost of switching, MDF, power, and host/remote umbilical investments.

Analog Line Offset

Paragraphs 179-181

The Commission's Staff is correct in its conclusion that the analog line circuit offset for digital lines should be set to zero. No concrete evidence has been presented by the HAI model sponsors to contradict Sprint's assertion that the analog line offset is inherent in the costs used to develop the switching cost curve(s). In order to apply an analog line offset, the switch cost curve would have to be based upon a 100% analog line cost basis, which it is not.

Switch Capacity Constraints

Paragraphs 182-183

Sprint agrees with the proposed 80,000 maximum line assumption for total switch capacity.

Switch Port Administrative Fill

Paragraphs 184-186

Sprint disagrees with the proposed switch port administrative fill factor of 94%. The BCPM 88% default value referenced in staff's conclusions is ***objective***, not actual fill. ***Actual*** fill is 80%, a lower value. The definition for input for the switch port administrative fill is: "The percent of lines in a switch that are assigned to subscribers compared to total equipped lines in a switch." Clearly this definition represents a relationship between actual subscribers to actual equipped lines. Similar to Sprint's comments relative to paragraph 171, the ***actual*** fill that an efficiently run company can reasonably be expected to achieve should be used. The Commission should not use an objective fill which will never be achieved in reality (even a forward-looking reality) due to the natural relationship between switch demand, inventory, and provisioning interval requirements.

Trunking

Paragraphs 187-191

Sprint agrees with staff's conclusions regarding disabling the computation in the Synthesis Model that reduces the end office investment by using a hard coded 6:1 line to trunk ratio times a $100.00 trunk investment. Sprint continues to disagree, however, that the recommended $100.00 investment is adequate to be used in calculating actual trunk port investment for the tandem switch investment. Some of the data used in support for the $100.00 port investment is dated in nature. Attachment 8 hereto provides support for a $150.00 per trunk investment.

Transport Cost Inputs

While the Commission has not specifically requested comments on transport costs, it is important to note that Sprint's actual costs for transport equipment vary greatly from the Commission default inputs which are based on HAI Model defaults. These default costs are extremely low when compared to Sprint's most current vendor prices. Specifically, Sprint's total placement terminal investments, as well as the investment for an installed regenerator (includes labor, tax, shipping and handling) are drastically higher than the defaults. Different vendor configurations or varying discount rates cannot reconcile these vast differences. Accordingly, the current Synthesis Model default inputs for the fiber optic equipment are not at all reflective of Sprint's current prices for fiber optic equipment. More detailed cost calculations and vendor price quotes, all of which are Sprint proprietary information, are contained in Attachment 9 hereto, filed under seal. Please note that certain equipment parts have been adjusted in order to reflect more accurately how the equipment would be deployed in the network, *i.e.*, one spare package would not be deployed for every OC48 terminal.

EXPENSES

Plant Specific Operations Expenses

Nationwide Estimates

Paragraph 198

Sprint does not believe the use of nationwide estimated data accurately depicts the realities of operating in its service territories. The data the Commission used in formulating plant specific expense inputs for the synthesis model is heavily weighted toward the RBOCs' urban operating territories. As such, the nationwide averages are far below Sprint's actual costs. Sprint is concerned that if national average data is used for expense inputs, data from companies with a higher density of

customers (primarily the RBOCs), will cause expense/investment inputs to be much lower than the expense levels experienced by smaller carriers.

To illustrate this point, Sprint has compiled statistics on the number of switched access lines per kilometer of cable in service from the 1997 ARMIS Report 43-08 for three RBOCs and for Sprint. The following table reflects those statistics. Kilometers of cable include both copper and fiber for aerial, underground, and buried cable. These results show that the RBOCs studied have a much higher access line density than Sprint, which translates directly to economies in maintenance expenses. Only if study area specific inputs are used will costs accurately reflect the specific characteristics of high-cost areas.

	Switched Access Lines	Km of Cable	Lines Per Km
Bell South	22,772,890	1,041,594	21.86
Southwestern Bell	15,213,655	680,379	22.36
US West	16,132,694	697,457	23.13
Sprint	6,665,111	459,080	14.52

As stated earlier in these comments, the FNPRM's tentative conclusion that "... the use of national or regional averages for input factors is more consistent with the forward-looking nature of the high cost model because it mitigates the rewards to less efficient companies." Sprint strongly disagrees with this conclusion. This conclusion assumes that a carrier with higher than average expense ratios is "less efficient". In reality, if a carrier has higher than average expense ratios, it may be a legitimate indication that the carrier operates in a high-cost area. Recall the earlier plant mix example of hurricanes in the Southeast coastal region affecting aerial maintenance costs. National average data, by definition, does not reflect the realities of operating in specific high-cost areas.

Sprint believes that the best method of calculating plant specific expense ratios is simply to divide the current year's actual expense for each account by the average plant balance that gave rise

to the expense. The best source for that data is company-specific cost data. But if company-specific data is not used, some minimally acceptable level of input differentiation must be used to reflect legitimate differences in ratios. The expected forward-looking expense reductions then flow into studies in two ways. First, the investment base to which maintenance rates are applied is lower due to assumed economies of scale in reconstructing the forward looking network all at one time. Second, greater use of fiber in the forward-looking network leads to reduced maintenance cost because less maintenance is required of fiber than of the copper in the embedded network. Sprint has included a schedule that summarizes forward-looking maintenance reductions versus embedded maintenance costs in two recent Sprint cost filings. The Florida data is from the Florida Public Service Commission Docket 980696-TP, a USF proceeding. And the Nevada data is from Nevada Commission's Docket 98-6005, a UNE proceeding. The schedule supports Sprint's statement that significant maintenance reductions result from the assumption of a forward-looking network. The schedule shows that in two of Sprint's largest properties, Florida and Nevada, forward-looking plant specific maintenance costs fell by 28% and 30%, respectively.

Plant specific expense amounts are the total of switching, transmission and cable and wire facilities expense accounts:

	Docket	ARMIS 1997 Expenses	Forward Looking Expenses	% Change from Embedded
Florida - USF Filing	980696 - TP	138,863	100,181	-28%
Nevada – UNE Filing	98-6005	43,032	30,124	-30%

As for the concern that company-specific or some minimally acceptable level of input differentiation cannot be used because current cost-to-book data is not universally available, Sprint

does not believe that the use of a cost-to-book ratio is proper in the calculation of E/I data. The discussion of paragraph 208 below expands on this point.

Paragraph 200 - Labor Rate Variations

If a single set of national average data is used, Sprint believes that the methodology discussed in paragraph 200 (wherein a deflator is calculated based on the federal Pay Agent's report) appears to be a valid approach. The deflator should be applied to the salaries and wages portion of plant specific operations accounts. The proper source for salaries and wages amounts is expense matrix data required by Part 32 rules. Before Sprint could express an unqualified opinion on such a method, it would be necessary to examine the results of an example calculation.

Sprint's endorsement of an adjustment for labor rate variations (in the event that national average data is used) is not to be construed as an endorsement of the use of national average data. Sprint believes that the use of company-specific or small, medium, and large company data is most appropriate.

Paragraph 201 - Small, Medium and Large Company Inputs

Sprint disagrees with the conclusion that there is no difference between the maintenance expenses of small, medium and large companies. Although the Commission examined company size in relation to maintenance expense, there is no evidence that size was combined with any density measure (as discussed above) to reflect the aforementioned economies. Common sense dictates that maintenance spread over $10,000 of copper plant in rural Texas (where Sprint provides local service) will differ from maintenance of a $10,000 large cable stretching a short distance in downtown Dallas.

For a large company serving both urban and rural areas, these two maintenance extremes will offset each other. For a smaller company serving a primarily rural territory, they will not.

Paragraph 208 - Current-to-Book Ratios and Proposed Plant Specific Input Values

The FNPRM, in paragraph 202-208, outlines methodology whereby all prior years additions are brought forward to a current year level by the application of current-to-book ratios. Such an approach effectively equates to a first year maintenance cost versus a level representative of maintenance over the life of an asset. Sprint believes this approach understates maintenance expenses over the lives of assets. Consequently, Sprint believes that current-to-book ratios should not be used in calculating maintenance expenses.

As stated earlier, in comments related to paragraph 198, Sprint believes that the most accurate method of calculating plant specific expense ratios is simply to divide the current year's actual expense for each account by the average plant balance that gave rise to the expense. Forward-looking expense reductions then flow into studies in two ways. First, the investment base to which maintenance rates are applied is lower due to assumed economies of scale in reconstructing the forward looking network all at one time. Second, greater use of fiber in the forward looking network leads to reduced maintenance cost because less maintenance is required of fiber than of the copper in the embedded network. Reducing maintenance for a current-to-book ratio as well as for the technological factors discussed above constitutes a "double-dip" in maintenance reduction.

In practice, a telephone company's plant is made up of an accumulation of many years' additions; in most cases, at increasingly higher costs throughout the years. Due to increases in labor and material cost, maintenance will also increase each year. This has the effect of producing an

average maintenance rate that is higher than the rate in an asset's first year. Sprint has constructed an example, contained Attachment 10a, to illustrate this point. In the example:

1. The asset class has a ten year life;
2. The company begins business in year-1 and completes a cycle of plant in year-11, when the year-1 asset is retired and the year-11 asset is added;
3. Assets are added and retired at mid-year;
4. The beginning maintenance rate is 10%; and
5. Costs increase annually at a rate of 3% for both additions and maintenance expenses.

It is realistic to assume rising costs over the life of an asset because in today's telecommunications environment, competitive wages and annual salary increases must be offered in order for an employer to attract and keep good employees.

The average maintenance rate is shown on the bottom line of Attachment 10a. As the example shows, the average maintenance rate:

1. Is 10% in the first year;
2. Climbs in years 2 through 11 due to increases in maintenance cost while prior year's investment remains constant; and
3. Remains constant at 11.55% from the 11th year, when a full 10 years of plant is reflected in average TPIS.

The 11th through the 20th year reflected on Attachment 10a is most indicative of real world operations, since that time frame best illustrates the impact of rising costs of maintaining long term assets after a complete cycle of additions and retirements. Of course, in contrast to the reality

demonstrated in the example, indexing of plant would cause the maintenance rate for all years to revert to the first-year rate of 10%. In the case of Attachment 10a, the first year rate of 10% versus the run rate of 11.55% represents a 13% understatement of the maintenance rate.

Any telephone company, other than a company in its first few years of operation, will find itself in a situation where the tiering of additions has started to increase the average maintenance rate, such as the example shown in Attachment 10a. The use of a current-to-book ratio implicitly assumes that a company is in its first year of operations. Sprint does not believe that the concept of forward-looking plant was intended to encompass an assumption that all plant is brand new and that a company should be considered to be in its first year of operation.

Perhaps a simpler way of demonstrating the same point is to show the impact of rising maintenance costs throughout the life of a single unit of plant. Sprint ahs constructed an example, Attachment 10b, which demonstrates this impact. The assumptions for Attachment 10b are the same as those for Attachment 10a, except only one unit of plant is studied. The example results in an average maintenance rate of 11.64% over the economic life of the asset. Again, the point is made that using the first year's maintenance rate of 10% would substantially understate maintenance costs.

The concept of recovering average maintenance over the life of an asset is similar to the concept of calculating return on investment on a net asset balance over the life of the asset. The application of an equated cost of money to an investment to calculate the total of all years' returns on an investment recognizes that an average return over the life of the asset is theoretically correct. In the case of return on investment, if the first year return were incorrectly projected over the whole life of the investment, return would be significantly overstated. Conversely, in the case of indexing of investment for calculating maintenance rates, maintenance would be significantly understated if the first year rate were applied over the life of the investment.

Maintenance rates should be representative of the costs to operate over the life of the asset. Otherwise, in years after the first year, USF cost recovery will not reflect the reality of operating conditions and supported expenses will be understated. To this extent, implicit subsidies remain implicit. The rate should allow for the recovery of average maintenance expenses over the life of the asset and not assume a constant first-year rate.

Sprint's proposal to use the current year's actual expense for each account divided by the current year's average plant balance theoretically mirrors the results of Attachments 10a and 10b, and would produce maintenance rates that would recover average maintenance expenses over the lives of assets.

In addition to Sprint's disagreement with the overall approach of indexing plant, it will comment specifically on three of the proposed plant specific operations input values.

Aerial Cable Metallic, Underground Cable Metallic, and Buried Cable Metallic Expense

In all of these categories of expense, Sprint's inputs are significantly higher than the Commission input values contained in the June 2, 1999 version of the model. These differences are summarized below. Sprint's averages are based on non-rural companies' regulated results for 1997:

	Sprint LTD Average	FCC Input Value
Aerial Cable Metallic	8.77%	5.89%
Underground Cable Metallic	3.75%	1.63%
Buried Cable Metallic	6.26%	4.07%

Again, incorporating RBOC data into the derivation of the Commission inputs understates the ratios for smaller carriers. Higher levels of customer density for the RBOCs bring about more efficient operations that cannot be duplicated by smaller carriers. Maintenance in Sprint's non-rural territories will naturally be higher than that of the RBOCs' since Sprint's territories are more sparsely populated. These results again point to the importance of basing inputs on company-specific or small, medium, and large company data.

Converting Expense Estimates to Current Values

Paragraph 209

While Sprint does not believe that plant investment should be multiplied by a current-to-book ratio to calculate maintenance expenses, it acknowledges that if such ratios are used, then investment and expense data should be updated to the most recent calendar year available.

GSF Investment

Paragraph 211

Sprint disagrees with two points in the calculation of GSF expenses. First, it is plainly mathematically incorrect to include the ARMIS GSF plant itself in the denominator to compute a GSF plant ratio that is then applied to model TPIS which does not include GSF plant. GSF plant for the model should be calculated as ARMIS GSF plant divided by ARMIS TPIS less GSF plant, multiplied by model TPIS without GSF plant. Sprint believes this is the mathematically correct method of calculating such a ratio.

Second, by applying a book GSF plant ratio to forward-looking plant necessary to provide supported services (not including GSF plant), modeled GSF plant has also been converted to a forward-looking level necessary to provide supported services. The application of an office worker allocator is not necessary, since before this proposed step in the calculation, modeled GSF plant is

already at a level necessary to provide supported services. Application of the office worker allocator at this point in the calculation has the effect of reducing GSF plant twice for the same issue.

COMMON SUPPORT SERVICE EXPENSES

Nationwide Estimates

Paragraphs 214-216

Sprint believes that nationwide estimates should not be used for support expense inputs. Like plant specific inputs, the differences in operating characteristics of low and high-cost companies will be fully reflected in the cost model only if company-specific or small, medium, and large company support expense inputs are used.

Data Source

Paragraph 217

Sprint believes that 1998 ARMIS data should now be used in calculating support inputs. 1996 data is becoming quite old at this point, and use of recent data should incorporate any productivity gains realized in the last three years.

Regression Methodology

Paragraph 219

In paragraphs 212-220 of the FNPRM, the Commission discusses its methodology for estimating forward-looking customer and corporate operations expenses, referred to as a component of common support service expenses (at p. 83). The econometric methodology is described in paragraphs 218-219, and is derived from information presented at Commission workshops that took place during December 1998, in which Sprint was a participant. The Commission specifically asks for comment on this methodology.

The Commission's regression methodology was an attempt to identify what portions of customer and corporate operations expenses are attributable to the provision of basic service. Alternately, what portion of expenses might be attributable to providing toll, special access, or other non-supported services and therefore might be subtracted out from a company's reported expenses. While Sprint understands the intention, the actual process used by the Commission's econometricians is so severely flawed and without basis that the resulting expenses (currently used in the model) are both meaningless and hugely understated.

Sprint specifically welcomes the opportunity to comment on the methodology used because it appears that the staff and the econometricians involved have committed three separate but equally serious errors.

- First, they have exaggerated the significance of their statistical findings beyond a level justified by the regression results themselves.
- Second, in the process of the first, they have made the often-committed error of interpreting regression results in such a way as to imply causality.
- Third, they have ignored the logical implications of their results.

With regard to statistical significance, it is first worthwhile to examine the overall explanatory power of the regression equations as used in the FNPRM. The table below lists the Adjusted R^2 for the Commission's equations as well as re-specifications of the equations including an intercept term and dropping either the variable "Switched Lines as a Percent of Total" or "Special Lines as a Percent of Total". Since the two are functions of each other ("Switched" = 1 – "Special") the Adjusted R^2 will be the same.

Adjusted R^2	6610 Per Line	6620 Per Line	6710/20 Per Line	6510 Per Line	6530 Per Line
FCC Specification, No intercept	.13	.27	.16	.04	.14
With Intercept, Omitting Switched	.14	.28	.17	.06	.16
With Intercept, Omitting Special	.14	.28	.17	.06	.16

The econometricians at Sprint are aware of the danger involved in over-interpreting a simple measure such as an Adjusted R^2. Also, in the absence of an intercept term the measure takes on a different interpretation and therefore comparisons should not be made regarding whether one specification is somehow better or stronger than another using this measure.[12] However, it is quite acceptable to view the measure independently in either case as an overall indication of the power of the specification. The extremely low numbers in the table above provide evidence that, regardless of the specification of the equation, these independent variables are *very* poor predictors of expenses per line in every case.

(Continuing with the discussion of statistical significance, the variable "Special Lines as a Percent of Total" proved to be statistically insignificant for a majority of the regression specifications: 6610 (both Data Request (DR) specifications), 6620 (both ARMIS and both DR specifications), 6710/20 (both ARMIS and both DR), 6510 (1 ARMIS and 1DR), 6530 (both ARMIS). This will be addressed below.)

Next, despite the poor showing of these variables, the Commission specification without intercept in essence *forces* the dependent variable (expenses) to be a function of these and only these things. In other words, although the regressions above provide solid evidence that vast

majority of expenses per line cannot be associated with, or attributed to, these variables, the Commission specification attributes 100% of the variation in expenses to these three variables. Then, because the Synthesis Model does not support costs associated with special access lines or toll, the portion of expenses that have been (incorrectly) attributed to those two variables are subtracted from the predicted expense level. This is a classic case of the Commission misinterpreting a regression coefficient to somehow show causation. The implication in the Commission's equation is that expense per line are "caused" by three things: switched lines, special lines, and toll minutes. The further implication is that if we want only the expenses "caused" by basic service, we can subtract out the expenses that we have determined are "caused" by toll and special access lines. This interpretation and application of the regression results is completely erroneous. To quote Peter Kennedy's well known *A Guide to Econometrics*, "the existence of a relationship between variables proves neither the existence of causality nor its direction.[13]" Dr. Kennedy goes on to inform his readers that if the existence of a relationship did show causality, it has been shown statistically that Christmas card sales cause Christmas.[14]

Based on discussions with the Commission, it is Sprint's understanding that the justification for excluding the intercept term was that if it were ***not*** excluded, the resulting regression would indicate that a company incurred expenses even if it had no lines. This statement shows that the Commission has significantly misinterpreted its own regression variables and its own results. The variables included in the Commission's regression are not the number of lines that are switched or special, but the percentage or portion of total lines that are either switched or special. If an intercept term is included in the equation and the variable "percent of total lines that are switched" is set to

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[12] A good explanation of the interpretation of the Adjusted R Squared with and without an intercept can be found in Maddala, *Introduction to Econometrics*, Macmillan Publishing Company, 1988.
[13] Peter Kennedy, *A Guide to Econometrics*, MIT Press, 1992.
[14] Ibid, p.68.

zero, this does not mean a company has expenses when it has no lines. Rather, it simply means there are expenses that do not vary (or depend on) the percent of lines that are switched.[15]

The points that appear to have been ignored by the econometricians at the Commission are these:

1. ***The portion of a company's lines that are switched lines does not represent any measure of basic service.***
2. Furthermore, the portion of a company's lines has that are switched lines does not represent an ***amount of activity per line*** (either ***per switched*** line or ***per total*** line) that is attributed to basic service. Assume 2 companies:

Company	Total Lines	Switched Lines (%)	Total Local Minutes	Local Minutes per Line	Local Minutes per Switched Line
Company A	100,000	95,000 (95%)	1,000,000	10	9.5
Company B	500,000	450,000 (90%)	6,500,000	13	11.7

In this case the regression only uses the figures of 95% and 90%. The Commission's regression results would imply that less of Company B's per line expenses were attributable to basic local service, when in fact Company B clearly has more local activity per line than does Company A.

3. Most importantly, the portion of a company's lines that are switched lines does not represent the ***portion of per line activity*** dedicated to basic service. This is most easily observed by examining the correlation coefficient between switched lines/total and local DEMS/total DEMS. Using the Commission's own data, these two variables exhibit a correlation coefficient of -.34.

[15] Of course the reality is that it is highly likely that a company **would** have start-up expenses even if it has not yet acquired a single customer. Overhead expenses are just that, expenses that do not change significantly with any change in output levels. Looking at any company, not just a telephone company, if the CEO has a desk and an office (traditional examples of overhead costs) prior to the company acquiring a customer, the company will have overhead expenses.

The magnitude of the coefficient, plus it's negative sign, combined with the other points made above, indicate that there is no relationship whatsoever between the portion of total lines that are switched lines and the portion of expenses that are caused by, or attributable to, the provision of basic service. For the Commission to use this variable alone (by incorrectly eliminating large portions of expense) to determine the magnitude of per line expense results in a significant understating of expenses. Additional support for this is shown below in the form of "reality checks" using Part 36 accounting information.

Finally, the logical implications of the Commission's results appear to have been completely ignored. The regression results for Account 6610 indicate a positive and significant coefficient for ***both*** "switched lines/total lines" and "special lines/total lines". Such results would mean than an increase in the percent of switched lines raises expenses. But such an increase, by definition, translates to a decrease in the percent of special lines, which lowers costs. It is impossible to "hold all else constant" and observe a change in one variable, since a change in one by definition creates a change in the other.

Removal of One-Time Expenses

Paragraph 222

Sprint agrees that current information with respect to one-time corporate operations expenses should be supplied by the companies on an annual basis.

Removal of Non-Supported Marketing Expenses

Paragraph 224

Sprint believes that the Economics and Technology, Inc. 95.6% allocation of marketing expenses for non-supported services is reasonable. However, Sprint believes that the use of such a factor in conjunction with the regression methodology discussed earlier reduces total company

marketing expense twice for the same issues. The fact that the Commission's regression is fatally flawed does not eliminate the concerns that follow, particularly in the case that the regression would be corrected.

Note that in Appendix F, page F-4 of the FNPRM, total monthly marketing expense per line is approximately $1.72. After the regressions are run, the average of specifications for marketing expense is approximately $0.58, a reduction of $1.14. Then, the application of the Economics and Technology, Inc. factor of 95.6% further reduces the input from $0.58 to approximately $0.03. In total, marketing expense is reduced from $1.72 to $0.03, a reduction of $1.69 or 98.26%.

In paragraph 219 of the FNPRM, the regression specifications were explained as "... chosen to separate the portion of expenses that could be estimated as attributable to special access lines and toll usage, which are not supported by the high cost mechanism... " Obviously, the regression methodology was intended to reduce total company expenses by amounts estimated to be attributable to non-supported services. Then, in paragraph 224 of the FNPRM, the Economics and Technology, Inc. factor is explained as "This analysis attributes an average of 95.6% of company marketing costs to non-supported customers or activities, such as vertical and new services." Obviously, the Economics and Technology, Inc. factor is also intended to reduce total company expenses by amounts estimated to be attributable to non-supported services. Thus, the methodology proposed for removal of non-supported marketing expenses, when used in conjunction with the regression methodology, removes non-supported expenses twice.

Sprint does not support the regression methodology, and it believes that a direct reduction of total company marketing expenses for only the Economics and Technology, Inc. factor is an acceptable method for calculating the marketing expense input.

Removal of Non-Supported Customer Operations Expenses

Paragraph 225

As noted above, the fact that the Commission's regression is fatally flawed does not eliminate the concerns that follow, particularly in the case that the regression would be corrected.

Sprint believes that the use of factors to reduce customer operations expenses for non-supported activities such as coin service, directory publishing, access billing and IXC office operations is reasonable. However, Sprint believes that the use of such factors in conjunction with a *corrected* regression methodology reduces total company customer operations expense twice for the same issues.

In paragraph 219 of the FNPRM, the regression specifications were explained as "... chosen to separate the portion of expenses that could be estimated as attributable to special access lines and toll usage, which are not supported by the high cost mechanism... " Obviously, the regression methodology was intended to reduce total company expenses by amounts estimated to be attributable to non-supported services. Then, in paragraph 225 of the FNPRM, the 12.46% factor is explained as "We also propose adjustments for non-supported service costs related to coin operations and collection, published directory, access billing, inter-exchange carrier office operation, and service order processing, which are associated with specific expense accounts used in the regression analysis." Obviously, the 12.46% factor is also intended to reduce total company expenses by amounts estimated to be attributable to non-supported services, primarily toll calling. Thus, the methodology proposed for removal of non-supported customer services expenses, when used in conjunction with the regression methodology, removes non-supported expenses twice.

Converting Expenses to 1999 Values

Paragraph 226

Sprint does not believe that expenses should be adjusted for a productivity or inflation factor. Productivity gains are largely driven by technology changes that are already assumed in forward-looking investments. Using annual company-specific or some minimally acceptable level of input differentiation incorporates inflationary changes without resorting to arbitrary assumptions.

Estimates of Corporate Operations, Customer Operations, and Plant Non-Specific Expenses

Paragraph 227

In the paragraphs above, Sprint illustrated the flaws inherent in the Commission's regression methodology used to calculate customer and corporate operations expenses. In the paragraphs below, Sprint provides what it believes are reasonable estimates for the same expense categories. Sprint is confident that if the Commission were to correct its regression methodology, the estimates would come much closer to the values listed in the paragraphs below.

Plant Non-Specific Expenses

During the past year, Sprint has provided the Commission with a large amount of information designed to serve as support for specific ***investment*** input values to be used in the Commission's proxy model. This information has included invoice pricing, actual contractor costs, and more. With regard to operating ***expenses***, Sprint believes it is consistent to look to the actual experiences of firms currently providing basic service, particularly firms operating under price

regulation since those firms possess the same incentives for efficiency that any competitive firm possesses.

Sprint believes that the component parts of the plant nonspecific expenses are directly attributable to the provision of basic local service because Sprint utilizes the best available technology and most efficient methods in its operations. Sprint's actual expenses are the appropriate measures to use when determining forward-looking network operations expense levels for use in the Commission's costing model.

Sprint believes that the input value for network operations expense in the FNPRM, $1.35, understates the costs that an efficient provider would incur in Sprint's operating territories. Sprint believes that an input value of approximately $2.91 is appropriate and more accurately estimates the necessary forward-looking costs of providing local service. Sprint's value of $2.91 is a composite of our estimates for our non-rural carriers. Supporting data for this amount was provided previously in this proceeding in *ex parte* comments.

The loop component of Sprint's proposed input alone is significantly higher than the synthesis model input. (The loop component is $2.24.) In previous *ex parte* filings, Sprint has provided detailed discussions of the content of the network operations accounts. Such discussions pointed out that the great majority of network operations expenses were related to basic local service. Still, Sprint's input value of $2.91 represents a 23.4% reduction from total booked expense. In the Appendix F, page F-4 of the FNPRM, the total company per line amount for account 6530 is $3.01. The final input value is $1.35. This reduction of $1.66 represents a 55% reduction of total company expense.

As a reality check, Sprint calculated a basic local service revenue requirement for our non-rural companies with the Part 36 investment categories of local switching, subscriber circuit

equipment, and subscriber cable and wire facilities portion of investment, plant specific expenses, and taxes. Investment and expense data was taken from 1998 ARMIS reports 43-01. The resulting basic local service revenue requirement was then compared to the total company revenue requirement. This comparison showed that 79.73% of Sprint non-rural total revenue requirement is attributable to subscriber plant (supported services). This benchmark suggests that an approximate reasonable reduction to expense would be in the range of 20% (100% - 79.73%). Contrasted with the Commission's proposed 55% reduction, the $1.35 input is clearly unreasonable. In the case that the Commission's flawed regression methodology cannot be corrected, Sprint proposes that this methodology be used in its place. This calculation is included as Attachment 11.

When the content of network operations accounts is examined, it is impossible to reconcile this magnitude of reduction to total company expense. Following is a recounting of Sprint's analysis of functions supported by network operations accounts. Sprint believes that in reading this analysis, it becomes apparent that the Commission's proposed 55% reduction of book network operations expenses is not reasonable.

Account 6531 contains expenses of providing power for switching and carrier equipment. No reductions in power expense are expected in a forward-looking environment, and Sprint believes that the current level of expense is appropriate.

Account 6532, traffic engineering, is expense associated with monitoring line and trunk usage and planning for future line and trunk needs. This account relates to both interoffice transport and switching investments. Only the amount assigned to switching of local calls has been included for USF recovery.

Account 6532, assignment, is expense associated with assigning plant facilities in association with service order activity. This account relates to both interoffice transport and loop investment.

The assignment function employs an automated system in which the vast majority loops and DLC equipment are automatically assigned without need for human intervention. Only the amount related to the assignment of loop facilities has been included for USF recovery.

Account 6532, supervision and other, are expenses associated with supervision and record keeping of the network administration function. This account has been assigned to USF based on the composite percentage of traffic engineering and assignment expenses assigned to USF.

Account 6533, line testing, is the expense of testing loop facilities. Sprint utilizes state-of-the-art test systems to test trouble reports without human intervention and to route those reports to the appropriate work groups. The test systems also automatically test customer facilities on a proactive basis to identify and analyze potential problems so that they may be dealt with economically on a proactive basis, rather than with a more inefficient individual dispatch.

Account 6533, other testing, are the expenses of testing switching and loop carrier equipment. Local switching and loop carrier has been assigned to USF.

Account 6533, supervision and dispatch, are the expenses of supervising the test function and dispatching technicians on trouble reports. This account has been assigned to USF based on the composite percentage of all testing expenses assigned to USF.

Account 6534, central office, is the administrative expense associated with supervision of the central office, loop carrier system, and interoffice carrier system maintenance and construction functions. The central office plant operations administration function utilizes fully automated network trouble monitoring, centralized network maintenance centers, and automated scheduling of central office maintenance activities. Only amounts associated with loop carrier and local switching have been assigned to USF.

Account 6534, outside plant and cable and wire, is the administrative expense associated with the supervision of the outside plant maintenance and construction functions. Only amounts associated with loop carrier and loop cable have been assigned to USF.

Account 6534, other, are the other expenses and the administrative expense associated with general supervision of the plant operations administration function. This account has been assigned to USF based on the composite percentage of all plant operations administration expenses assigned to USF.

Account 6535, cable and wire, are the expenses associated with the cable and wire engineering function which are not chargeable to specific jobs. Interoffice transport expenses have been excluded from USF. Loop expenses have been assigned to USF.

Account 6535, central office, are the expenses associated with the central office engineering function which are not chargeable to specific jobs. Loop carrier and local switching expenses have been assigned to USF.

Account 6535, drafting, are the expenses associated with the drafting function which are not chargeable to specific jobs. The drafting function employs a state of the art AM/FM system for central office and outside plant and a facilities data warehouse to make this information immediately and automatically available to other systems and functions. This account has been assigned to USF based on the composite percentage of all engineering expenses assigned to USF.

Account 6535, other administrative, are the expenses associated with preliminary engineering work done before project numbers are assigned, and with other engineering work not included elsewhere in the accounts. This account has been assigned to USF based on the composite percentage of all engineering expenses assigned to USF.